

### REMARKS

The above-identified application is United States application serial number 10/706,670 filed on November 11, 2003. Claims 27-35 and 38-46 are pending in the application. Applicant confirms that Claims 36 and 37 are withdrawn, but will be entitled to consideration of the species of Claims 36 and 37, which depend from generic Claim 27, if Claim 27 is determined to be allowable. Claims 27-35 and 38-46 are rejected. Applicant respectfully traverses these rejections.

#### Claim Rejections Under 35 USC §102

Claims 27-29, 31, 32, 33, 35, and 38-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Whitener (4,390,150) (hereafter Whitener). The Examiner states that Whitener discloses every aspect, element, and limitation in the claims, particularly Figure 6 and Col. 6 lines 35-50. With respect, Applicants disagree.

Independent Claim 27 recites "an area ruled vertical fin configured to minimize the rate of change of cross-sectional areas of the apparatus, wherein the vertical fin includes a "waisted" area." Independent Claim 39 recites "a fin that includes a "waisted" area, wherein the cross-sectional area of the waisted area is configured to help minimize the rate of change of cross-sectional area of the apparatus." The text of Whitener does not teach or suggest area-ruling the vertical fin; Whitener only teaches reducing the cross-sectional area of the fuselage (F3) while the fin 48 is generally of conventional design. (Whitener Col. 6, lines 30-35). The vertical fin 48 of Whitener is not configured to minimize the rate of change of cross-sectional areas of the apparatus (i.e., the aircraft), as further taught in Col. 6, lines 66-68 through Col. 7 lines 1-2, wherein Whitener states that the vertical and horizontal tail surfaces combine to depart substantially from the desired shape (of the Sears-Haack curve). If the vertical fin in Whitener was area ruled, the cross-sectional area of the fin (and the aircraft) would not depart from the Sears-Haack curve as much as shown in Fig. 7.

As shown in Fig. 7 of Whitener, the cross-sectional area of vertical fin (48) does not decrease in the middle, whereas the vertical fin shown in FIG. 1F of the present application does. Applicant does not know what the shape between the horizontal stabilizers 50 represents in Whitener, and Whitener does not disclose or suggest any purpose for it. Further, the portion of the vertical fin 48 that joins the engine nacelle 46 in Fig. 6 in Whitener does not appear to follow the shape of the object between the horizontal stabilizers; i.e., the vertical fin is not area ruled at any point between the base and the tip of the vertical fin. In contrast, Claims 28 and 40 recite "a body coupled to the root of the vertical fin, wherein the vertical fin includes the "waisted" area at the juncture of the body". Such features are not disclosed or suggested by Whitener. Accordingly, Applicant submits that Whitener does not disclose or suggest an area-ruled vertical fin as set forth in Claims 27 and 39 for at least these reasons.

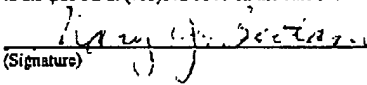
Claims 28-38 and 40-46 depend from Claims 27 and 39, respectively, and include features that further distinguish them from the prior art. Allowance of Claims 27-46 is requested.

*Claim Rejections Under 35 USC §103*

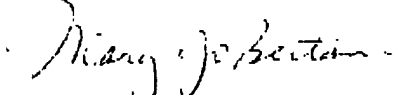
Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whitener in view of ordinary skill in the art. The Examiner states that although Whitener does not disclose a vertical fin with multiple waisted areas, it would have been obvious to experiment and choose any number of waisted sections and any shape that produced the desired effects. As stated hereinabove, Whitener does not disclose or suggest a vertical fin with a waisted area, and definitely does not disclose or suggest multiple waisted areas. From Fig. 7 and corresponding description in Whitener, it is clear that the vertical fin is not area-ruled with a waisted area, despite the object shown between horizontal stabilizers 50, nor is there any suggestion in Whitener to modify the vertical stabilizer to more closely approach the Sears-Haack curve. Claim 30 is allowable over Whitener and the ordinary skill in the art, for at least these reasons. Allowance of Claim 30 is respectfully requested.

Conclusion

Claims 27-35, 38-46, and withdrawn claims 36-37 are believed to be distinguishable from the prior art. The application is believed to be in condition for allowance, and notice to that effect is solicited. Should any issues remain that might be subject to resolution through a telephone interview, the examiner is requested to telephone the undersigned at (949) 251-0250.

I hereby certify that this correspondence is being facsimile transmitted to the USPTO at (703)872-9306 on the date shown below:	
	
(Signature)	
Mary Jo Bertani	
(Printed Name of Person Signing Certificate)	
October 4, 2004	
(Date)	

Respectfully submitted,

  
Mary Jo Bertani  
Attorney for Applicant(s)  
Reg. No. 42,321